

Demanded sound level meter performance characteristics according to DIN EN 61672-1:2003

61672-1:2003 Section	Formulation in performance characteristics checklist	PTB revision note
1.1 „Anwendungsbereich“ 5.1.9, 5.1.10 „Allgemeines“	Demanded functions class 1 – instruments: - L_{AF} , - L_{AFmax} - L_{Cpeak} , L_c - (L_{Aeq}) - (E_A) Demanded functions class 2 – instruments: - L_{AF} , - L_{AFmax} - (L_{Aeq}) - (E_A)	
5.1.14 „Allgemeines“	Exist types of measure $L_{xy_{max}}$ and / or L_{cpeak} , functions „Start“, „Stop“ and „Clearing“ have to be available	
5.1.15 „Allgemeines“	A device to insert electrical test signals is to send to the test lab.	
5.1.17 „Allgemeines“	Is the sound level meter equipped with multi-channels, the channels have to be assigned clearly to the input sockets.	
5.1.18 „Allgemeines“	The initial time interval shall not exceed 2 minutes after switching on the power. The initial time expiration has to be indicated. During this time a start of measure periods has to be prevented.	
5.2.1 „Pegelkorrektur“ siehe auch 9.2.5 a)	The sound level meters type label indicates registered calibrators.	

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5.2.2 „Pegelkorrektur“	The calibrators performance classification corresponds at least with the one of the sound level meter. The specified calibrator is not a laboratory standard sound calibrator	
5.2.6 „Pegelkorrektur“	Maximum deviations of measured correction values from manufacturer specifications: two thirds of the values in table 2	
5.5.4 „Pegellinearität“	On the reference level range, the extent of the linear operating range shall be at least 60 dB at 1 kHz.	
5.5.8 „Pegellinearität“	Required overlap of adjacent linear operating ranges of sound level meters, - measuring exclusively time-weighted > 30 dB, - measuring time-average - or sound exposure level > 40 dB	
5.10.1 „Bereichsüberschreitungsanzeige“ siehe auch 9.2.6 k)	The sound level meter has an overload indicator that shall be operative for each applicable display. Exist several overload displays, they have to be exactly synchronized.	
5.10.4 „Bereichsüberschreitungsanzeige“	At measurements of time-weighted and overload sound levels lasting less than 1 s, an overload indication of at least 1 s has to be presented. At longer overload sound levels an overload indication has to be presented at least as long as the overload condition exists.	
5.10.5 „Bereichsüberschreitungsanzeige“	Is one of the measurement functions L_{eq} E_A L_{smax} / L_{fmax} L_{cpeak} or another time interval related type of measure available, a latch on overload indicator has to be integrated.	
5.11.1 Bereichsunterschreitungsanzeige siehe auch 9.2.6 k)	At levels underneath the linear operating ranges an under-range condition has to be displayed before the tolerance limits on level linearity error are exceeded. The under-range display shall be presented as long as the condition continues, but at least 1 s.	

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5.12.1 „C-bewerteter Spitzenschallpegel“ siehe auch 9.2.3 i)	The display range for peak C sound levels should be at least 40 dB in reference level range.	
5.13.1 „Zurücksetzen“ siehe auch 9.2.6 i)	<p>Is one of the measurement functions</p> <p>L_{eq} E_A L_{smax} / L_{fmax} L_{cpeak}</p> <p>or another time interval related type of measure available, facilities have to be contained to clear the data-storage device and re-initiate a measurement.</p> <p>Time interval related types of measure have to be legible as constant numerical value after the end of the measuring period.</p>	
5.13.2 „Zurücksetzen“	<p>The reset facility transports all time interval related types of measure in a defined starting condition.</p> <p>Incorrect value display for time interval related types of measure should be ruled out.</p>	
5.15.1 „Anzeige“	In case several measurement quantities can be displayed, it has to be possible to indicate them clearly.	
5.15.3 „Anzeige“	<p>The display resolution has to be 0,1 dB or lower.</p> <p>The display range has to comprise at least 60 dB.</p>	
5.15.4 „Anzeige“	Digital display: The chosen type of value is continually up-dated.	
5.17.1 „Vorrichtungen zur Zeitmessung“ siehe auch 9.2.6 g)	<p>During time interval related measurements elapsed time is constantly displayed.</p> <p>For test purposes it has to be possible to select at least one pre-set time interval of 10 s.</p>	
5.18.2 „Hochfrequenzaussendung und Störungen des öffentlichen Stromnetzes“	<p>Maximum values of radio frequency emission:</p> <p>30 dB for frequencies from 30 MHz to 230 MHz.</p> <p>37 dB for frequencies from 230 MHz to 1 GHz (reference: 1μV/m, distance 10 m)</p>	

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5.18.3 „Hochfrequenzaussendung und Störungen des öffentlichen Stromnetzes“	Observance of maximum values by power supply feed back according to table 5. (Demands are complied with when interfering voltage peaks amount to less than corresponding average values.)	
5.19.1 „Übersprechen“ siehe auch 5.1.17, 5.19.2	In case several measuring channels are available, the channels have to be assigned clearly to the displayed types of measurement. The signal space caused by channel crosstalk has to amount to at least 70 dB in the described test procedure.	
5.20.1 „Stromversorgung“	Indication for sufficient power supply.	
5.20.2 „Stromversorgung“ siehe auch 9.3 j)	At an unstable power supply of the sound level meter the error limits demanded in the manual have to be met.	
6.1.3 „Umgebungsbedingungen allgemein“	The fixed sound calibrator operates in a 125 Hz to 1250 Hz frequency range. The calibration level dependance of the fixed sound calibrator on the surrounding conditions is known.	
61672-1:2003 6.1.4 Umgebungsbedingungen allgemein	Test at surrounding conditions excludes condensation above +39°C or below –15°C.	Only relevant to PTB test
6.2.1 „Umgebungsbedingung Stat. Druck“	Observance of demanded error limits (class1 $\pm 0,7$ dB, class 2 $\pm 1,0$ dB plus expanded uncertainty of measurement) at static pressure ranging from 85 kPa to 108 kPa.	
6.2.2 „Umgebungsbedingung Stat. Druck“	Observance of demanded error limits (class1 $\pm 1,2$ dB, class 2 $\pm 1,9$ dB plus expanded uncertainty of measurement) at static pressure ranging from 65 kPa to 85 kPa.	
6.3.3 „Umgebungsbedingung Lufttemperatur“ PTB-Forderung	Observance of demanded error limits: Class 1 $\pm 0,8$ dB plus expanded uncertainty of measurement at range of – 10 °C to + 50 °C and relative humidity between 25 % and 90 % Class 2 $\pm 1,3$ dB plus expanded uncertainty of measurement at range of – 10 °C to + 40 °C and relative humidity between 25 % and 90 %	

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6.4 „Umgebungsbedingung Feuchte“ (gleichbedeutend mit 6.3.3)	Observance of demanded error limits: Class 1 $\pm 0,8$ dB plus expanded uncertainty of measurement at range of $- 10$ °C to $+ 50$ °C and relative humidity between 25 % and 90 % Class 2 $\pm 1,3$ dB plus expanded uncertainty of measurement at range of $- 10$ °C to $+ 40$ °C and relative humidity between 25 % and 90 % Without condensation at range of $+ 39$ to $+ 50$ °C and below $- 15$ °C !	
6.5.1 „Umgebungsbedingung elektrostat. Entladung“	The sound level meter continues to operate as intended after exposure to a contact discharge of ± 4 kV and air discharge of ± 8 kV.	
6.5.2 „Umgebungsbedingung elektrostat. Entladung“ siehe auch 9.2.8 b)	Electrostatic discharges according to 6.5.1 do not result in: - Change of operating state - Change of configuration - Corruption of stored data - Loss of stored data	
6.6.1 „Umgebungsbedingung Netz- und Hochfrequenzfelder“	The defined power- or radio frequency fields do not cause: - Change of operating state - Change of configuration - Corruption of stored data - Loss of stored data	
6.6.6 „Umgebungsbedingung Netz- und Hochfrequenzfelder“	Observance of demanded error limits: Class 1 $\pm 1,3$ dB plus expanded uncertainty of measurement Class 2 $\pm 2,3$ dB plus expanded uncertainty of measurement Deviation of display with / without power resp. radio frequency field influence	
6.6.7 „Umgebungsbedingung Netz-- und Hochfrequenzfelder“	Group Y and Z sound level meter interference immunity to - radio frequency common mode interference - fast transients on the power supply - voltage dips as described in the standard.	

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6.6.8 „Umgebungsbedingung Netz-- und Hochfrequenzfelder“	Group Z sound level meter interference immunity to - radio frequency common mode interference - fast transients on the power supply as described in the standard.	
8.1 „Kennzeichnung“	Sound level meter marking: - standard reference number and date of publishing - responsible supplier / manufacturer - model designation - serial number - performance class according to standard	
8.2 „Kennzeichnung“	Principal components (basic instrument, pre-amplifier, microphone) of the sound level meter have to be marked with model designation and serial number. The software version has to be recognizable.	
8.3 „Kennzeichnung“	Communication interfaces and other electrical connections have to be logical and free of electrical interference. It has to be possible to seal the body of the sound level meter.	
9.1 a-c „Bedienungsanleitung“	Each sound level meter shall be supplied with a printed instruction manual that conforms to standard specifications.	
Anlage 21 zur Eichordnung Bedienungsanleitung	The instruction manual has to be easy to understand and in German language.	